ISMS Implementation for the Hanford River Corridor Contract

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U.S. Department of Energy
Richland Operations Office

Project Scope

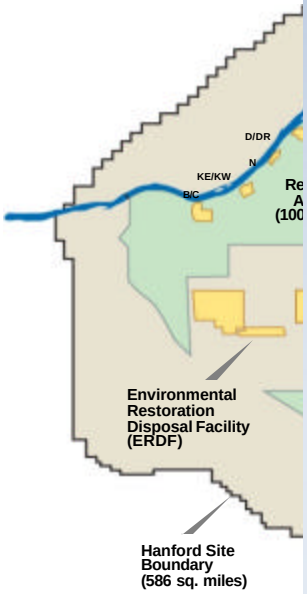
Demolition of 486 facilities

Remediation and closure of 370 waste sites

Place 3 reactors into safe storage condition

Waste treatment, transportation and disposal (4 million tons of waste)

Risk assessment and long-term stewardship



How it Works

Demolish Facilities

Cocoon Reactors

Remove Surplus Facilities

Remediate Waste Sites

Burial Ground Excavation

Transport contaminated soil and debris to disposal facility

Treat waste if required, then dispose

Environmental Restoration Disposal Facility

Risks and Hazards Near the Columbia River

Unearthed combination safe containing pure Pu in solution and other unknowns

Asbestos abatement at N Reactor

Drum unearthed at 118-K-1

Identifying contents of radiological materials in excavated waste

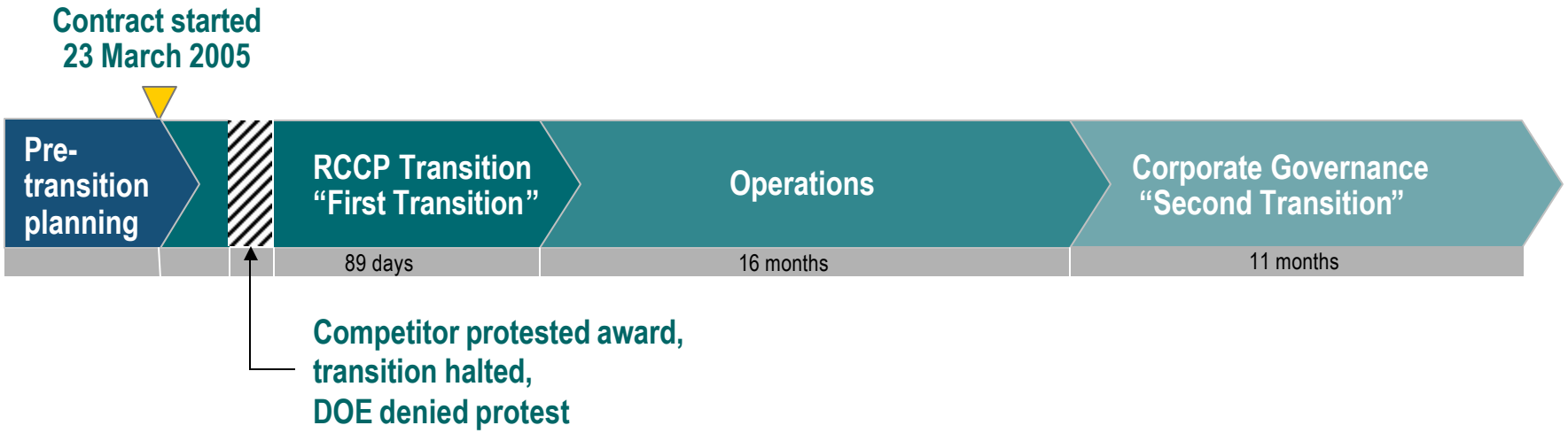
Sample analysis

Identifying contents of sealed metal tubes

Isolating degraded drum at 618-7

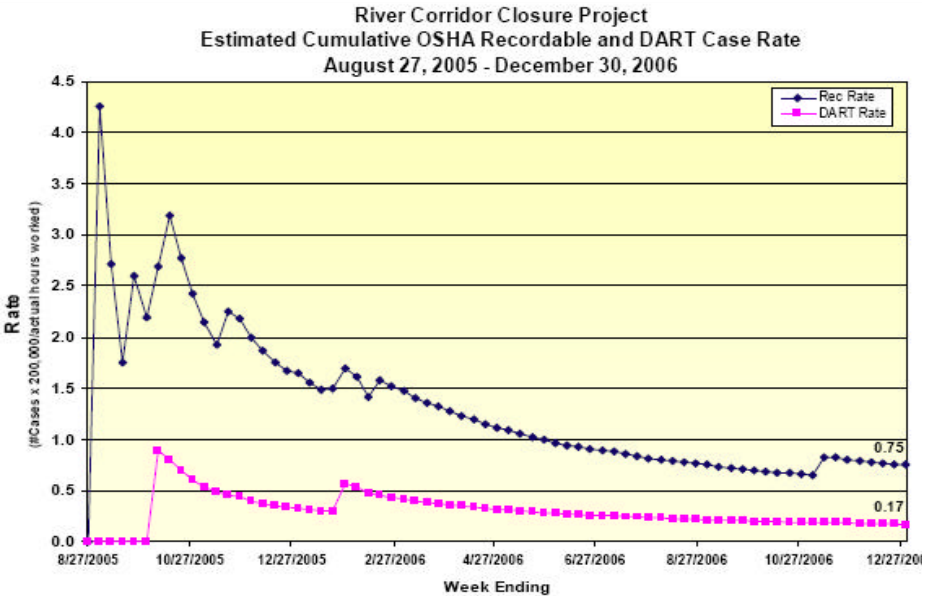
The River Corridor Project Involved a Complex Transition

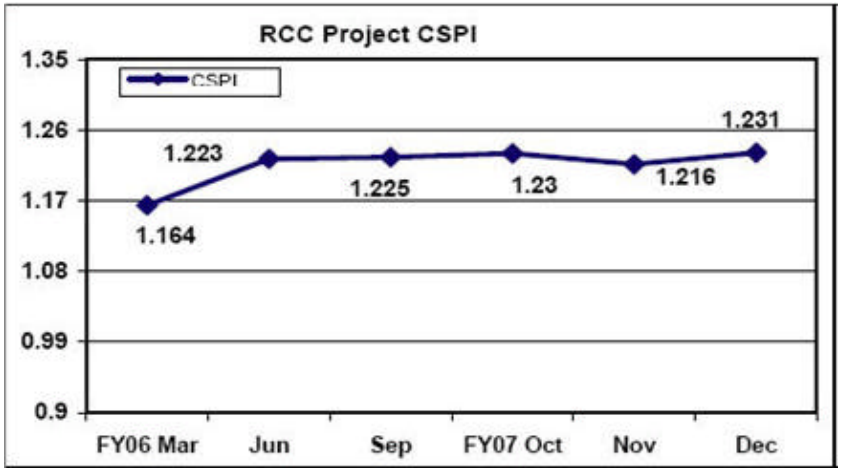
- Scope transitioned from 4 incumbent companies
- Negotiated 4 separate transition agreements
- Transition had to be completed in 90 days
- Integrated 7 new and 4 incumbent executive leaders
- Protracted procurement period leading up to contract award
- Changes in teaming partners
- Restructured work to increase subcontractor participation



During the First 16 Months of Operations

- Improvement in safety – recordable injury rate
- Project performance (CPI/SPI) exceeded targets
- However, other indicators/events identified growing issues with disciplined operations and subcontractor oversight



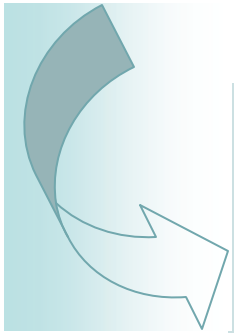


A Series of Negative Trends Indicated a Need to Change our Strategy

- Chromate leak – 30 gallons of liquid hexavalent chromium leaked into soil
- Waste compaction data – a review identified falsification of compaction data for the Environmental Restoration Disposal Facility
- Tritium contamination – workers inadvertently spread contamination but there were no uptakes

A Strategy for Improvement was Established

- ☑ Assess the Issues / Stop the Bleeding
- ☑ Rebuild the How / ISMS Verification
- ☑ Recover the Confidence
- ☑ Enhance Production



Focus Areas

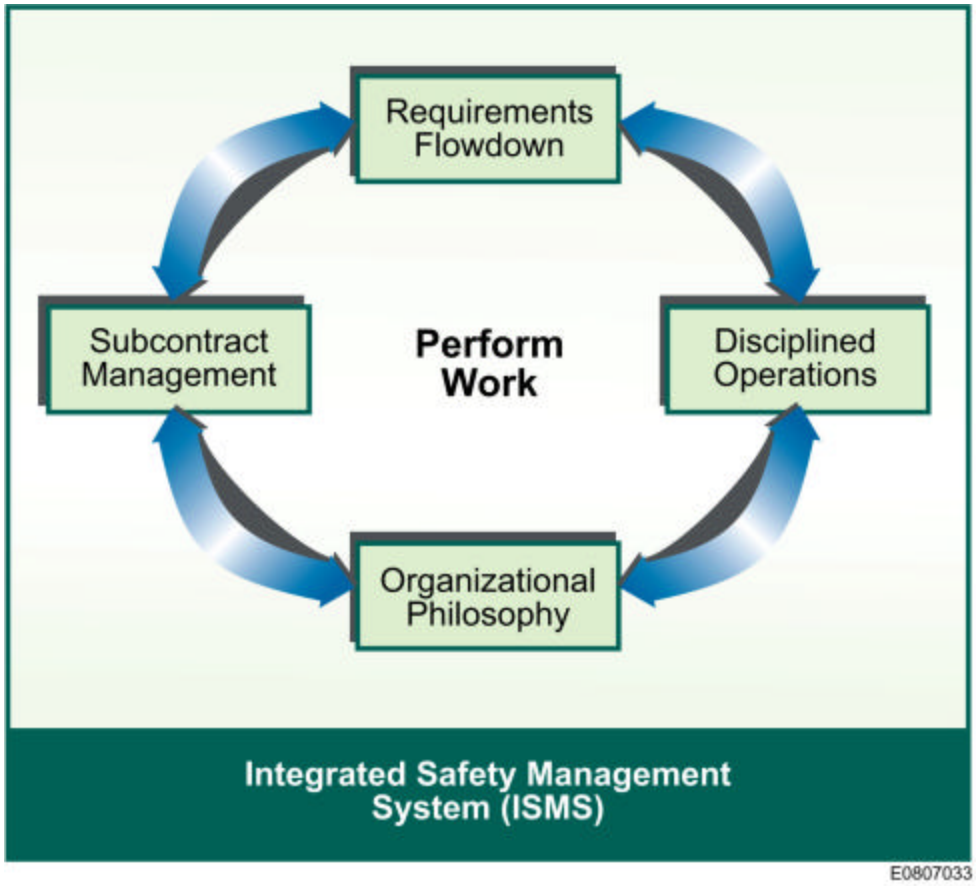
Safety

Teamwork

Disciplined Operations

Integrity

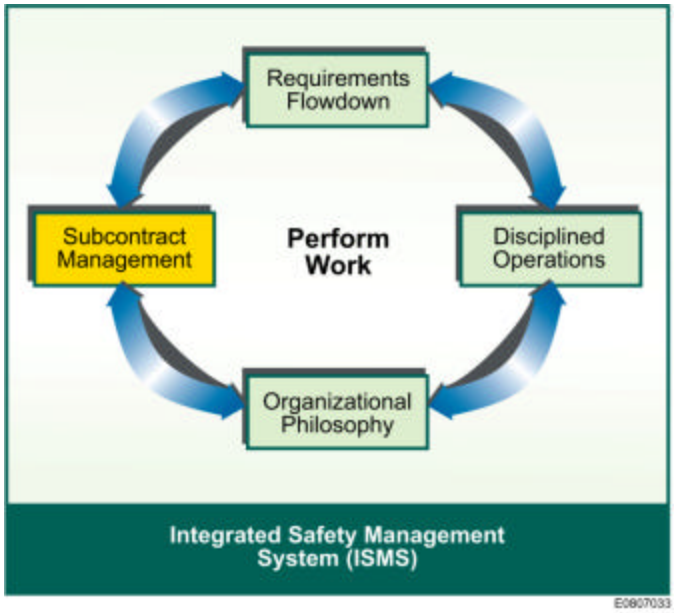
Reversing the Negative Trend Required Emphasis on Four Areas and our ISMS



Subcontract Management

Issues

- Needed additional subcontractor oversight
- Integrated Work Control Process implemented but needed time to mature
- Roles/responsibilities unclear



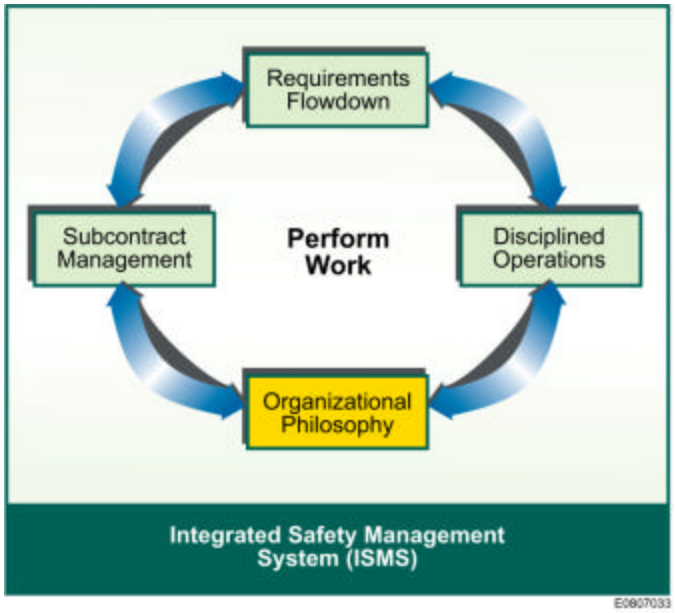
Resolutions

- Ensured STR's have required training and tools to provide subcontractor oversight
- Establish a functional management structure to support STR's
- Subcontracts modified to better incentivize appropriate performance

Organizational Philosophy

Issues

- Needed to strengthen role of functions
- Needed additional support for IWCP and CONOPS (Conduct of Operations)
- Needed to consolidate efforts associated with environmental and regulatory activities
- Needed to consolidate number of projects



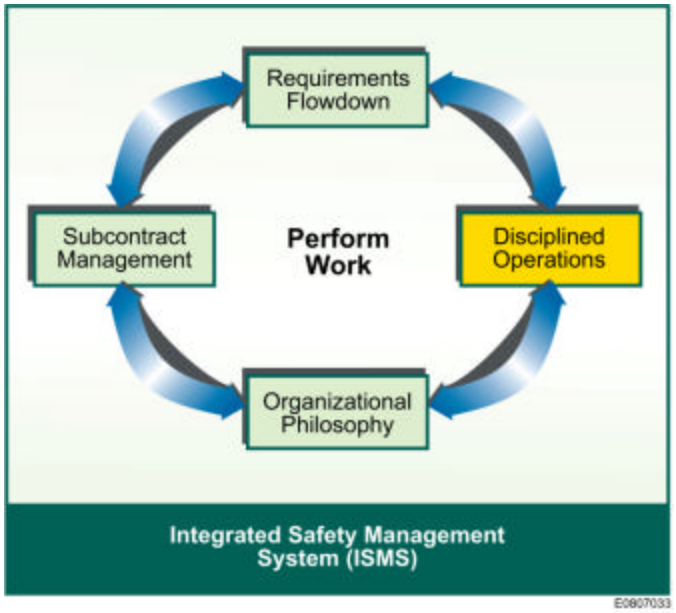
Resolutions

- Added a project Deputy Manager
- Reduced 5 project organizations to 3 projects
- Established new Environmental Protection organization
- Elevated Employee Concerns program
- Established new Operations Program function
- Established Performance Assurance function
- Clarified organizational roles and responsibilities

Disciplined Operations

Issues

- Increase involvement of employees in Integrated Work Control Program (IWCP) process
- Enhance rigor/consistency of work planning and execution
- No formal, tailored CONOPS program



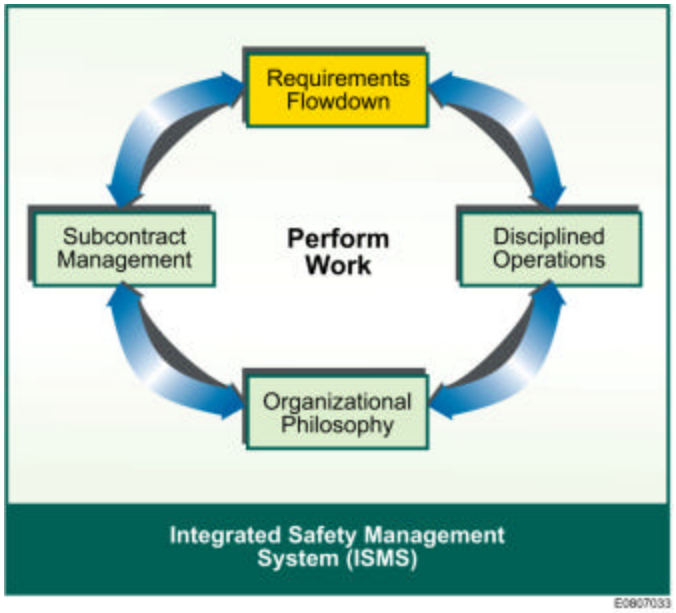
Resolutions

- Refined/matured IWCP program
- Incorporated lessons learned into IWCP
- Established CONOPS program
- Assigned senior CONOPS/IWCP coaches to field projects
- Established ESH&QA performance metrics
- Strengthened Executive Safety and Quality Review Board oversight
- Increased senior management presence in the field

Requirements Flowdown

Issues

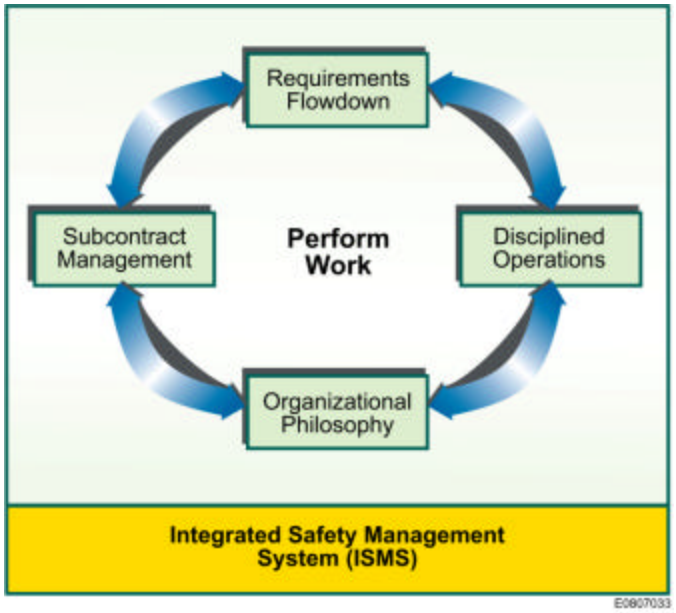
- Processes existed but poor implementation and lack of ownership
- No widespread noncompliance to ESH&QA requirements but systems to ensure ongoing compliance were inadequate
- Inadequate flowdown and oversight of ERDF subcontractor



Resolutions

- Took immediate action to correct deficiencies
- Instituted an Operations Agreement at ERDF
- Established a requirement flowdown matrix
- Formalized process for changing/interpreting requirements
- Strengthened assessment and surveillance program
- Strengthened Contractor Assurance System implementation

Integrated Safety Management System Program



Issues

- Needed more effort for ISMS Phase II verification preparation
- Disciplined Operations and ISMS programmatic knowledge insufficient to pass validation
- Inconsistent field execution of ISMS principles
- Delay required to ensure successful validation

Resolutions

- Delayed verification, deferred high hazard work and added compensatory measures to medium risk work
- Completed ISMS project and program support assessments
- Developed gap analysis and corrective actions
- Continued to communicate and engage workforce about ISMS
- Strengthened the QA program and its implementation
- Trained, mentored, and coached employees, and allowed “soak” time to improve
- Completed Phase II ISMS verification

Open Communications were Key to Recovering the Confidence of our Customer and Regulators

Your efforts during the last six months to implement an effective ISMS that is protective of the public, workers and the environment is noteworthy and reflect both your and my personal commitment to safety. I commend you, your management team and the entire WCH workforce for your efforts.

Letter from DOE Manager Dave Brockman December 14, 2007

"Washington Closure didn't take a band-aid approach or just do a short-term fix. Instead, the company reviewed the entire operation and made some significant changes that will take the facility operations to the next level. The public can be confident the facility is being operated properly and the Columbia River is being protected."

Nick Ceto, Program Manager
Environmental Protection Agency, Hanford Project Office
1 October 2007

Minutes: Hanford Advisory Board River and Plateau Committee Meeting
January 8, 2008

John Price (Dep't of Ecology Environmental Restoration Project Manager) expressed appreciation for WCH's response to lessons learned during previous risk assessment work by scheduling current work (Columbia River Investigation) to allow for an additional year of sampling.

"The contractor and DOE should be commended for extensive safety preparations and application of remote retrieval practices – I've never seen a retrieval that is more focused on worker safety."

618-7 Burial Ground, February 2008
Keith Smith, Chair of the Health, Safety & Environmental Protection Committee, Hanford Advisory Board

The WCH Transition Provides Lessons for Future Contract Transitions

Lessons Learned

Project health cannot be determined by production and safety performance alone.

The Contractor Assurance System implementation requires continuous management attention.

There's no substitute for senior management in the field, interacting with workers, to understand and improve safety culture.

Protect the "How" and apply a balanced approach between functions and production/operations.

Employ systems to ensure requirements are flowed down and implemented on an ongoing basis.

Replace key managers in a timely fashion.

Perform corporate ISMS readiness assessments with independent teams.

Utilize drills, dry runs, simulations, what if's, prior to initiating medium/high risk work.

Keep the contract baseline and requirements current.